

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The claims are amended as follows:

Claim 1. (Currently Amended) A wireless communication device, comprising:

a connection table for storing one or more connection identifiers, wherein a connection identifier corresponds to a Packet Coordination Function (PCF) that has been previously visited by the wireless communication device, the connection table indicating whether a connection between the wireless communication device and each PCF is active;

a receiver for receiving a connection identifier;

a processor for determining if the received connection identifier is contained in the connection table, and for delivering the received connection identifier to the connection table for storing when the received connection identifier is not contained in the connection table;

a transmitter for sending a registration in response to the received connection identifier when the received connection identifier is not contained in the connection table; and

a first inactivity timer associated with the connection identifier, wherein the processor removes the connection identifier from the connection table in response to an expiration of the first inactivity timer, the first inactivity timer configured to expire before a second inactivity timer maintained in a **Packet Data Serving Node (PDSN)** to which the wireless communication device is connected via the PCF and which is also associated with the connection identifier;

wherein the processor resets the first inactivity timer in response to activity on a connection corresponding to the connection identifier, and

wherein the processor is further operable to determine that the registration is not needed if the processor determines that received connection identifier is contained in the connection table.

Claim 7. (Currently Amended) A Packet Data Serving Node (PDSN), operable with a plurality of **Packet Coordination Functions (PCFs)** via a corresponding plurality of connections, each PCF operable to communicate with one or more wireless communication devices, the PDSN further operable with a network for directing data for transmission to one or more wireless communication devices, comprising:

a connection table for storing a plurality of connection sets, each connection set comprising one or more connections associated with a wireless communication device, wherein a first timer in the PDSN and a second timer in the wireless communication device correspond to each of the connections and wherein the first timer is set to expire after the second timer;

a processor for selecting a connection from the one or more connections in a connection set associated with a wireless communication device for which data is directed from the network; and

a buffer for receiving data from the network that is designated for delivery to a wireless communication device, storing the received data until the wireless communication device is located, based on an active connection, on one of the connections in the connection set and transmitting the stored data on the selected connection to the wireless communication device.

Claim 20. (Currently Amended) A method of registering and maintaining connections, comprising:

receiving a connection identifier at a wireless communication device;
determining if the received connection identifier is contained in a connection table, and registering a connection in response to a received connection not contained in the connection table;

storing the received connection identifier in the connection table when the connection is not contained in the connection table, wherein the connection identifier corresponds to a Packet Coordination Function (PCF) that has been previously visited by the wireless communication device and indicates whether a connection between the PCF and the wireless communication device is active;

determining that the registration is not needed if the received connection identifier is in the connection table; and

removing the connection identifier from the connection table in response to expiration of a first inactivity timer associated with the connection identifier and maintained by the wireless communication device, the first inactivity timer configured to expire before a second inactivity timer maintained in a **Packet Data Serving Node (PDSN)** to which the wireless communication device is connected via the PCF and which is also associated with the connection identifier;

wherein the first inactivity timer is reset in response to activity on the connection corresponding to the connection identifier.

Claim 23. (Currently Amended) A method of registering and maintaining connections, comprising:

establishing one or more connections with one or more **Packet Coordination Functions (PCFs)**;

storing a plurality of connection sets in a connection table, each connection set comprising one or more connections with a PCF and associated with a wireless communication device;

buffering received data from a network that is designated to a wireless communication device, storing the received data until the wireless communication device is located, based on an active connection, on one of the connections in the connection set;

selecting a connection from the one or more connections in a connection set associated with a wireless communication device for which data is directed and

transmitting the stored data on the selected connection to the wireless communication device; and

maintaining a plurality of first timers that correspond to each of the connections and wherein each of the plurality of first timers are set to expire after each of a plurality of second timers in the wireless communication device.

Claim 28. (Currently Amended) An apparatus, comprising:

means for receiving a connection identifier at a wireless communication device;

means for storing the received connection identifier in a connection table when the connection is not contained in the connection table, wherein a connection identifier corresponds to a Packet Coordination Function (PCF) that has been previously visited by the apparatus and indicates whether a connection between the PCF and the wireless communication device is active;

means for determining if the received connection identifier is contained in a connection table, and

means for registering a connection in response to a received connection not contained in the connection table;

means for determining that the registration is not needed if the received connection identifier is in the connection table; and

means for removing the connection identifier from the connection table in response to expiration of a first inactivity timer associated with the connection identifier and maintained by the wireless communication device, the first inactivity timer

configured to expire before a second inactivity timer maintained in a **Packet Data Serving Node (PDSN)** to which the wireless communication device is connected via the PCF and which is also associated with the connection identifier; wherein the first inactivity timer is reset in response to activity on the connection corresponding to the connection identifier.

Claim 29. (Currently Amended) An apparatus, comprising:

means for establishing one or more connections with one or more **Packet Coordination Functions (PCFs)**; means for storing a plurality of connection sets in a connection table, each connection set comprising one or more connections with a PCFs and associated with a wireless communication device, wherein a first timer in the apparatus and a second timer in the wireless communication device correspond to each of the connections and wherein the first timer is set to expire after the second timer;

means for buffering received data from a network that is designated to a wireless communication device;

means for storing the received data until the wireless communication device is located, based on an active connection, on one of the connections in the connection set;

means for selecting a connection from the one or more connections in a connection set associated with a wireless communication device for which data is directed; and

means for transmitting the stored data on the selected connection to the wireless communication device.

Allowable Subject Matter

2. Claims 1, 5-7, 9-15, 20, 22, 23, 25, 28 and 29 are allowed.
3. The following is an examiner's reason for allowance:
 - a. Regarding claims 1, 20 and 28 Madour (US 20030053431 A1), (hereinafter, Madour) discloses a wireless communication device, comprising: a connection table for storing one or more connection identifiers, wherein a connection identifier corresponds to a Packet Coordination Function (PCF) that has been previously visited by the wireless communication device, the connection table indicating whether a connection between the wireless communication device and each PCF is active; a receiver for receiving a connection identifier; a processor for determining if the received connection identifier is contained in the connection table, and for delivering the received connection identifier to the connection table for storing when the received connection identifier is not contained in the connection table; a transmitter for sending a registration in response to the received connection identifier when the received connection identifier is not contained in the connection table (see Office Action of 05/28/2009).

The instant invention discloses "a first inactivity timer associated with the connection identifier, wherein the processor removes the connection identifier from the connection table in response to an expiration of the first inactivity timer, the first inactivity timer configured to expire before a second inactivity timer maintained in a

Packet Data Serving Node (PDSN) to which the wireless communication device is connected via the PCF and which is also associated with the connection identifier; wherein the processor resets the first inactivity timer in response to activity on a connection corresponding to the connection identifier, and wherein the processor is further operable to determine that the registration is not needed if the processor determines that received connection identifier is contained in the connection table".

The combination of the above features in the claims are neither taught, suggested nor made obvious by Madour.

b. Regarding claims 7, 23 and 29, Madour discloses a Packet Data Serving Node (PDSN), operable with a plurality of Packet Coordination Functions (PCFs) via a corresponding plurality of connections, each PCF operable to communicate with one or more wireless communication devices, the PDSN further operable with a network for directing data for transmission to one or more wireless communication devices, comprising: a connection table for storing a plurality of connection sets, each connection set comprising one or more connections associated with a wireless communication device, wherein a first timer in the PDSN and a second timer in the wireless communication device correspond to each of the connections and wherein the first timer is set to expire after the second timer (see Office Action of 05/28/2009).

The instant invention discloses "a processor for selecting a connection from the one or more connections in a connection set associated with a wireless communication device for which data is directed from the network; and a buffer for receiving data from

the network that is designated for delivery to a wireless communication device, storing the received data until the wireless communication device is located, based on an active connection, on one of the connections in the connection set and transmitting the stored data on the selected connection to the wireless communication device".

The combination of the above features in the claims are neither taught, suggested nor made obvious by Madour.

c. Claims 5-7, 9-15, 22 and 25 are allowed based on their dependency on their respective independent claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwasi Karikari whose telephone number is 571-272-8566. The examiner can normally be reached on M-T (9am - 7pm). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571-272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8566. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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